

Figure 1A

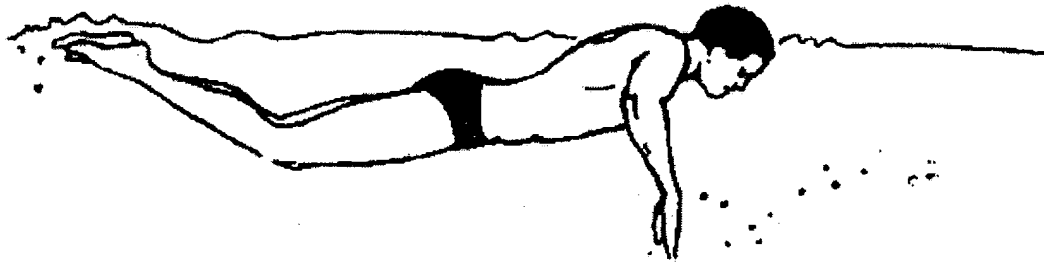


Figure 1B

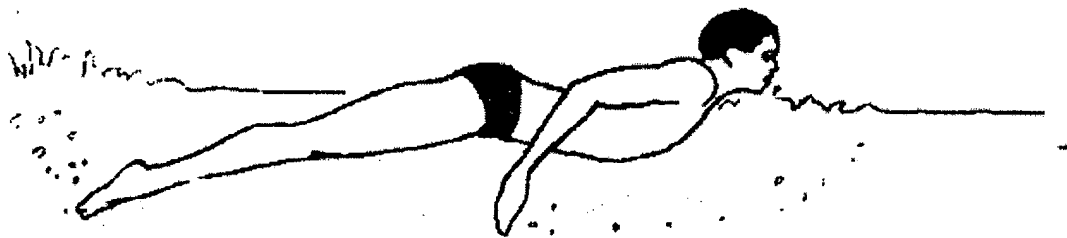
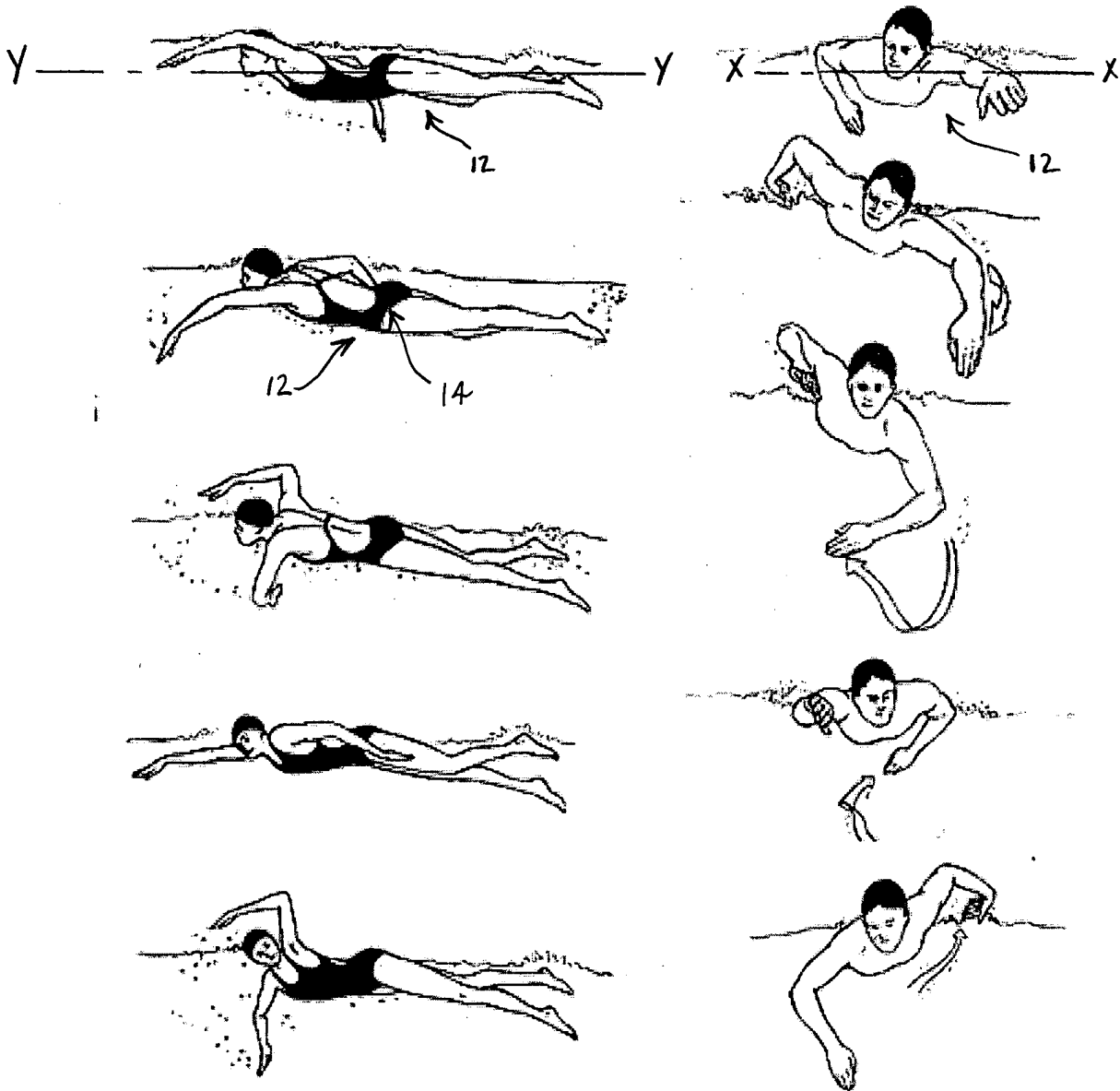


Figure 1C

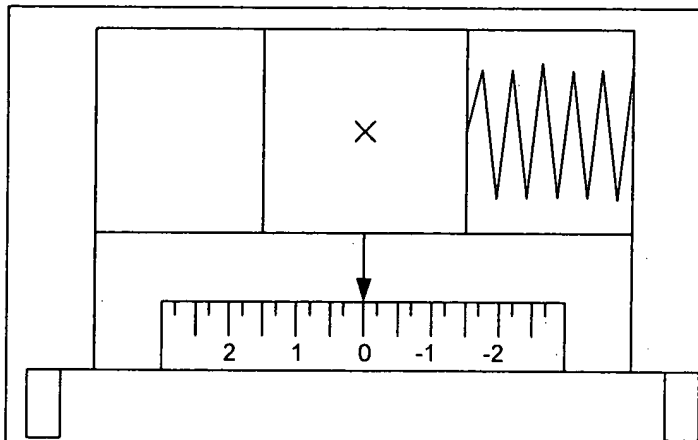
20221014012302



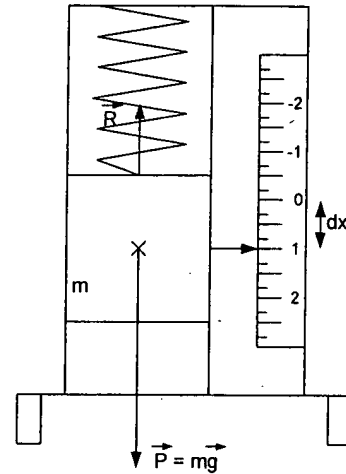
Figures 2A-2E

Figures 2F-2J

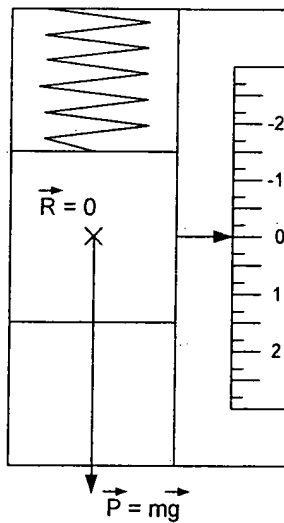
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**Figure 3: The accelerometer is not submitted to elongation or compression forces.**

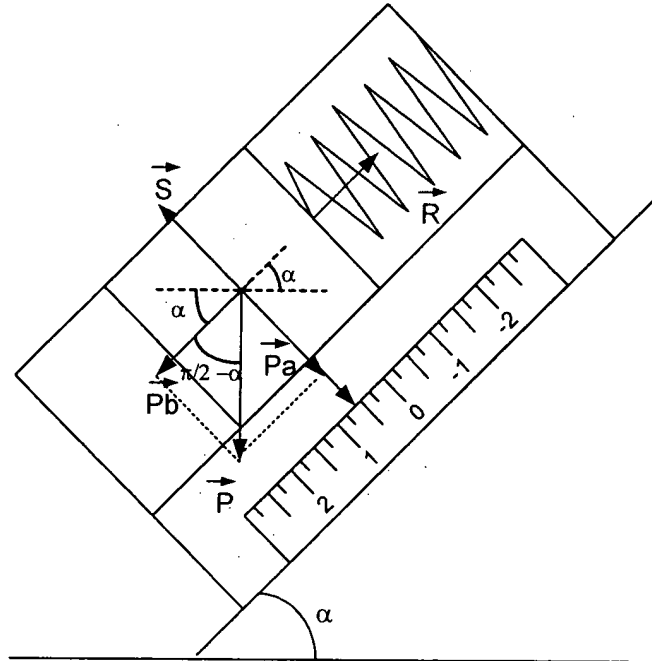


**Figure 4: The accelerometer is submitted to the force of gravity (static acceleration).**

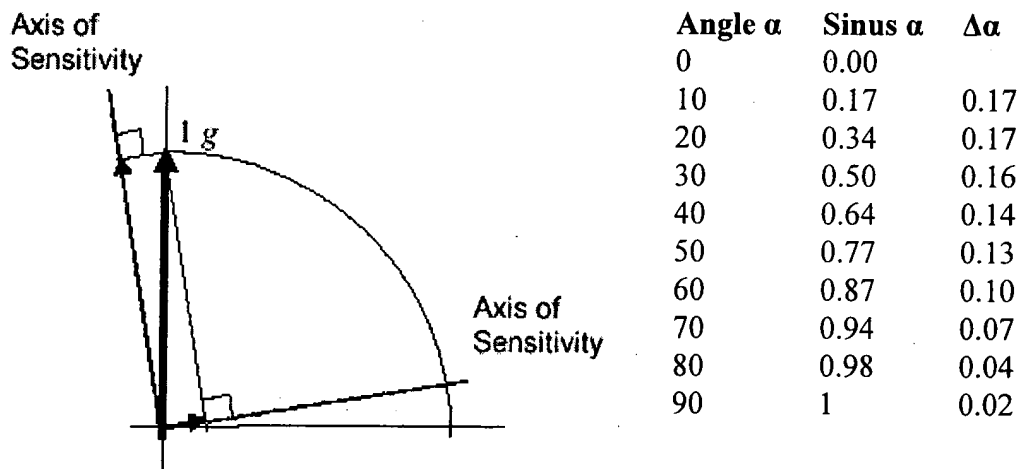


**Figure 5: System in free fall**

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**Figure 6: Accelerometer laying at an angle**



### Figure 7 Axes of sensitivity



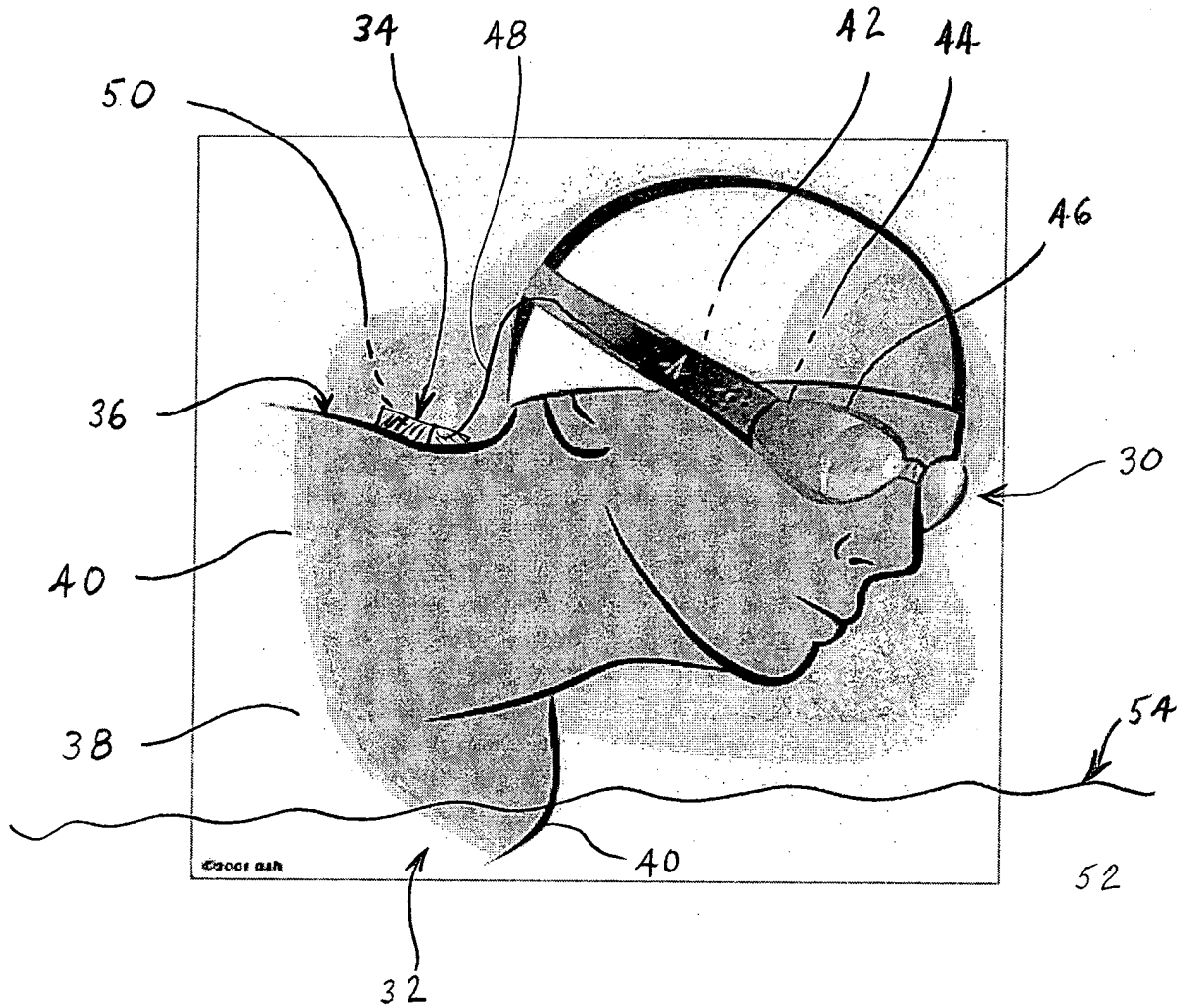
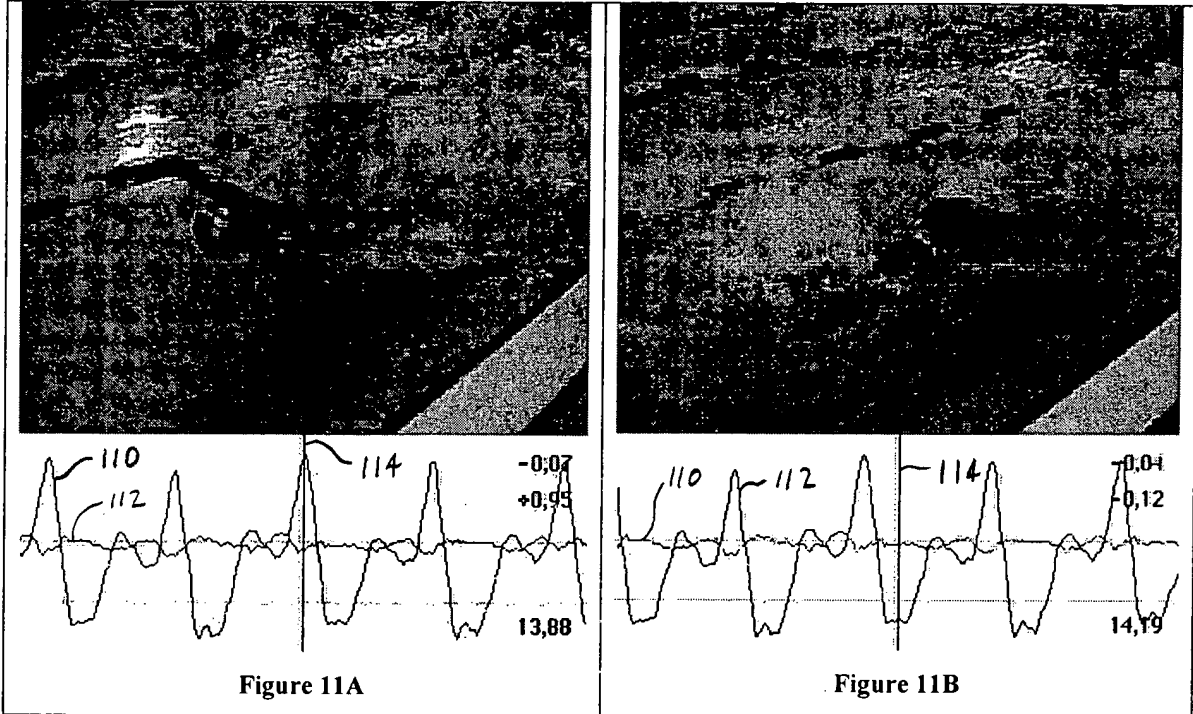
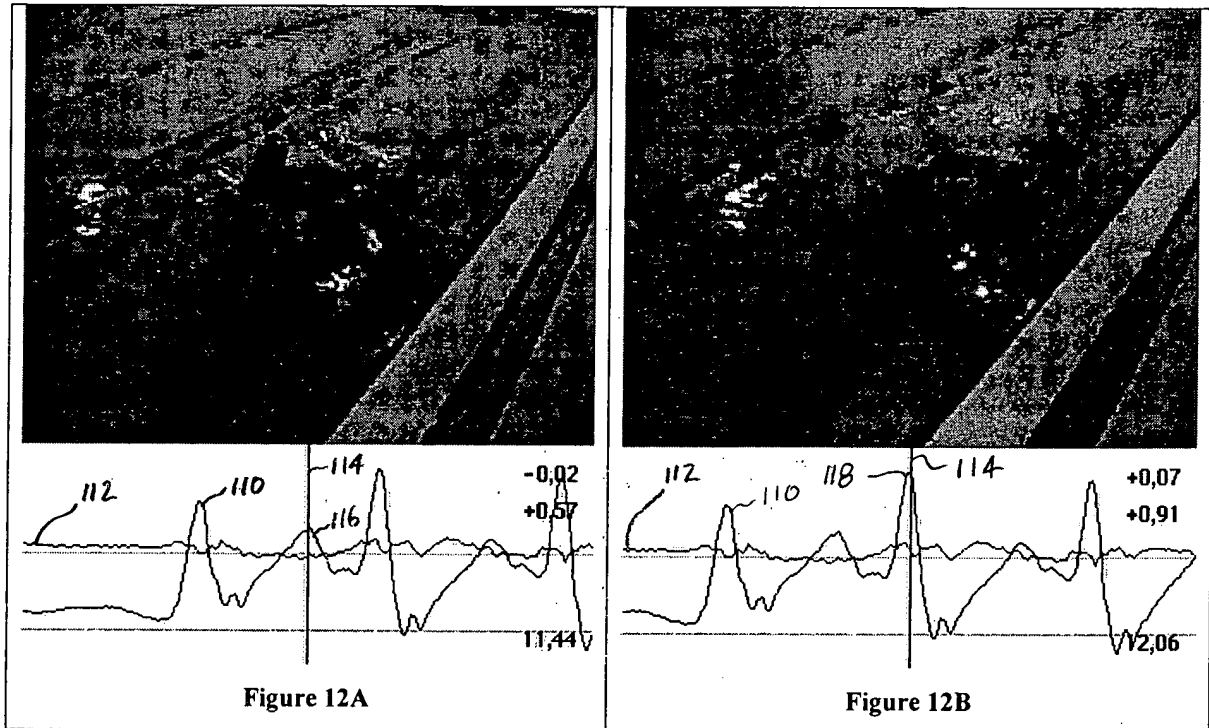


Figure 10

Butterfly

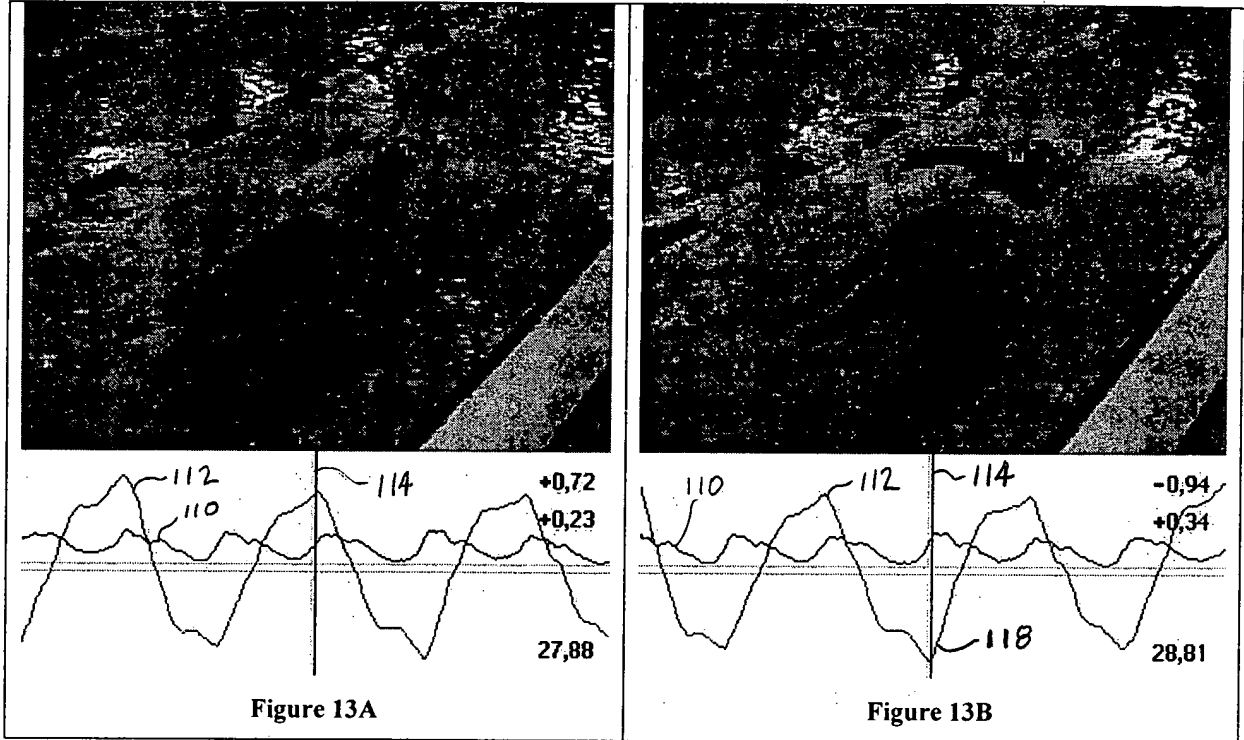


Breaststroke

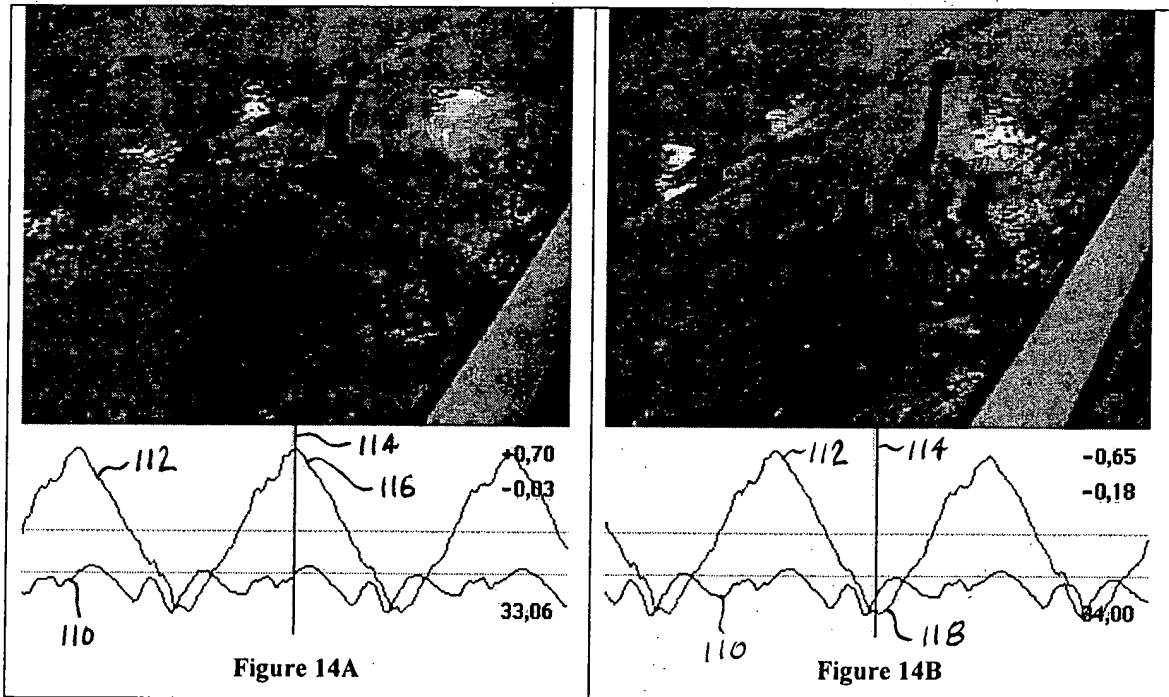


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Crawl



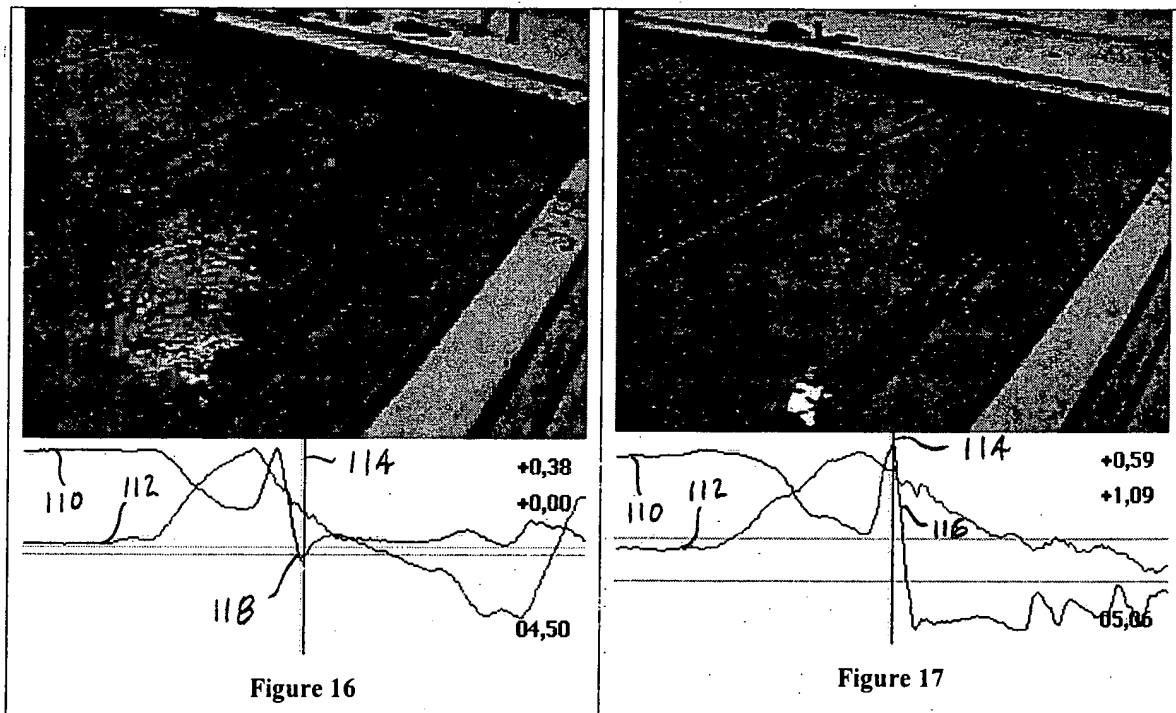
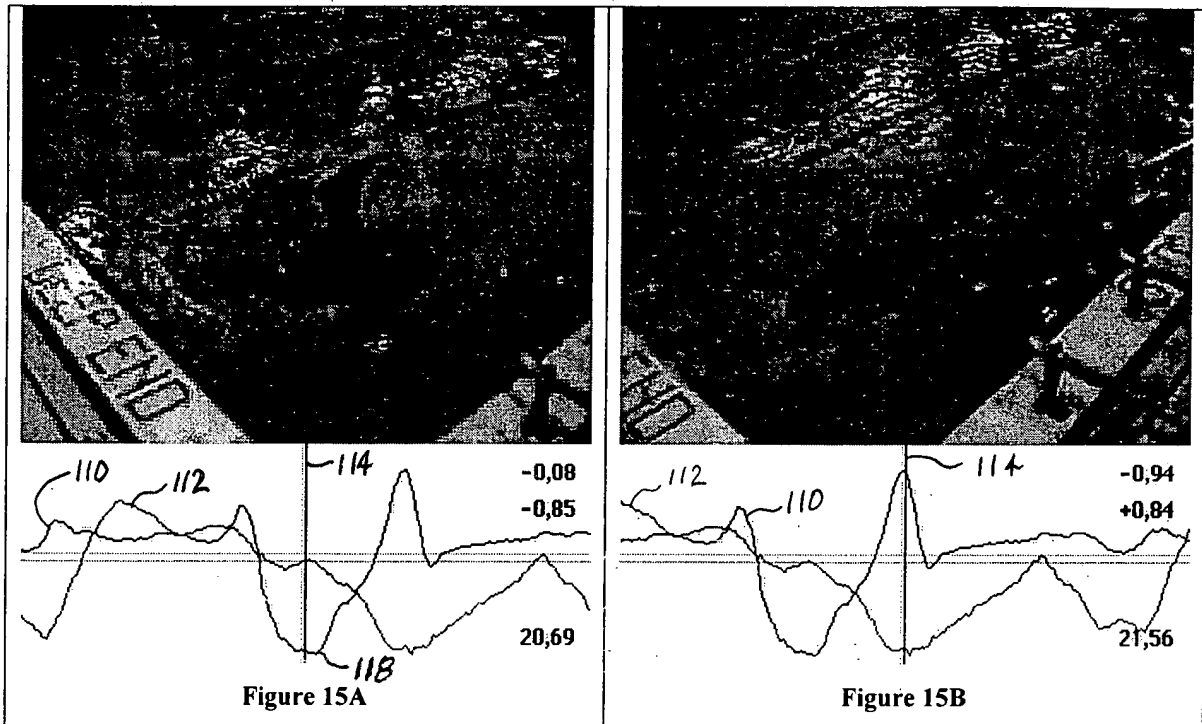
Backstroke



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Starts and turns



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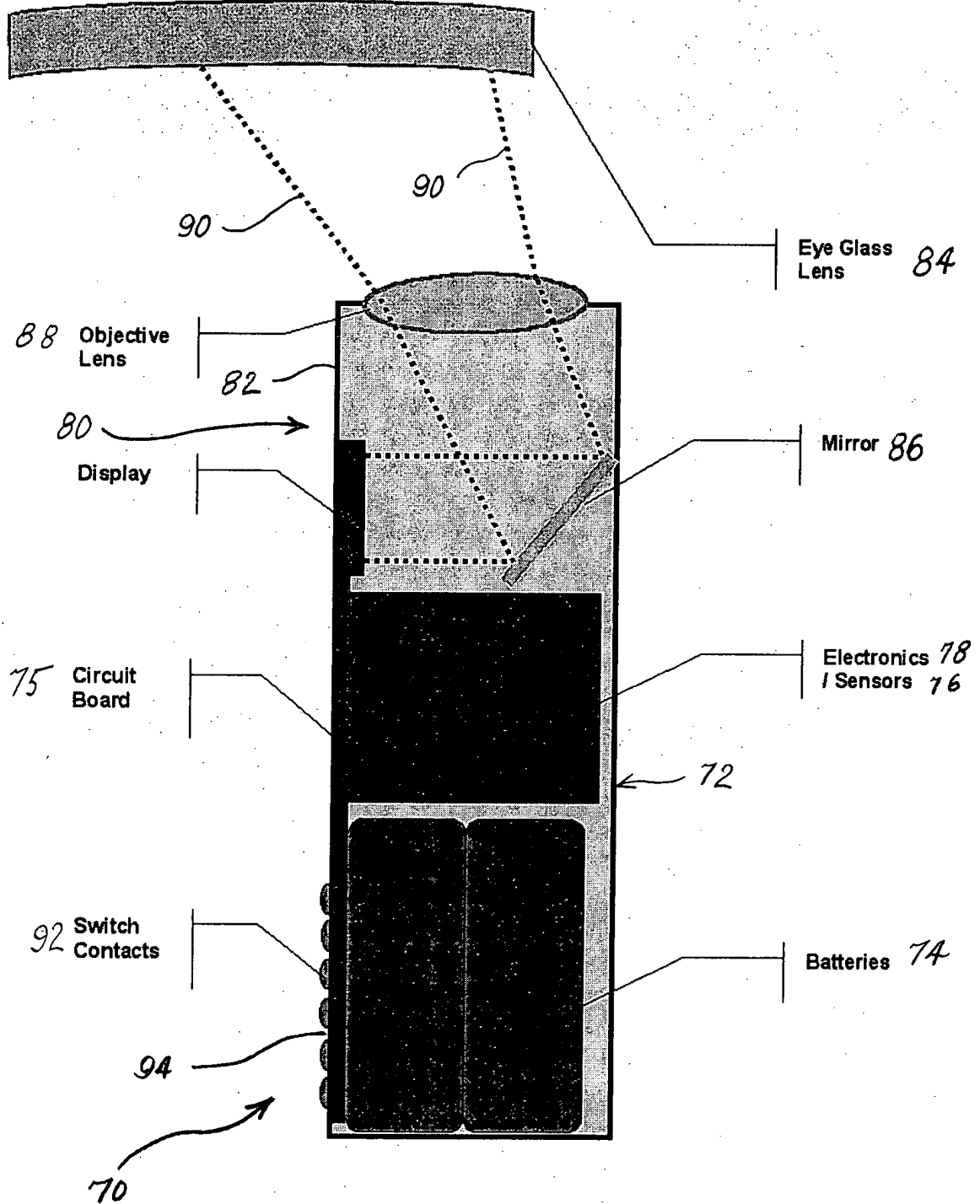
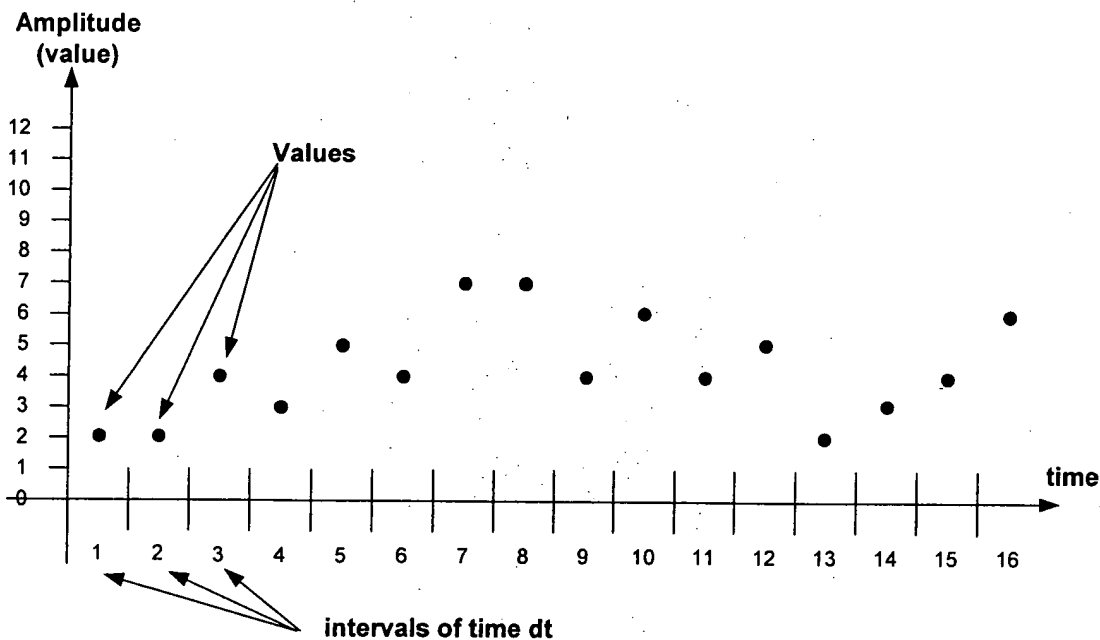
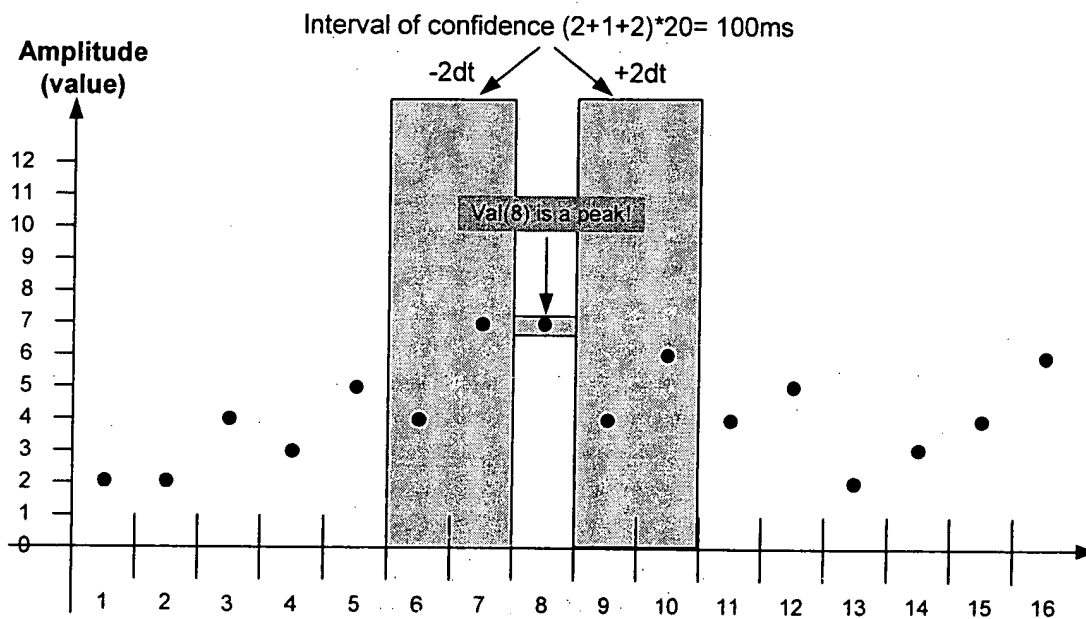


Figure 18



- Digital samples provided by the accelerometer every dt interval of time. if the accelerometer is set to sample at 50Hz,  $dt = 1/50 \approx 20$  ms.

**Figure 19: Example of digital samples captured by the accelerometer at 50Hz**



**Figure 20: Illustration of an interval of confidence representing 100ms. Sample 8 is a peak centered within an interval of 100ms**

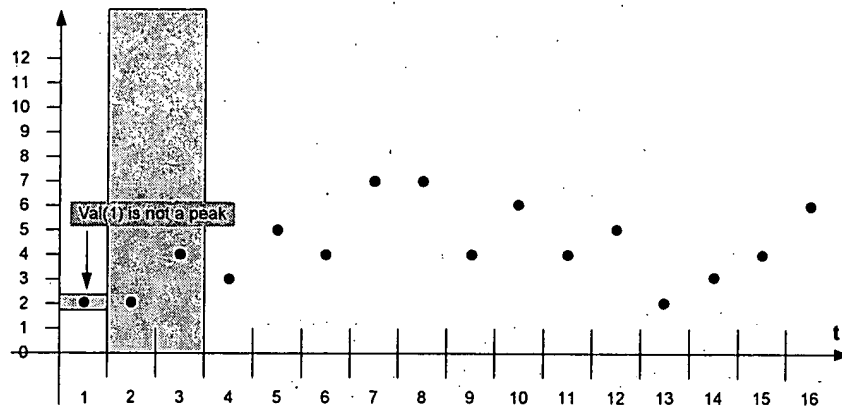


Figure 21: 1<sup>st</sup> digital sample is compared to its 2 closest neighbors to the right (no data available to the left)

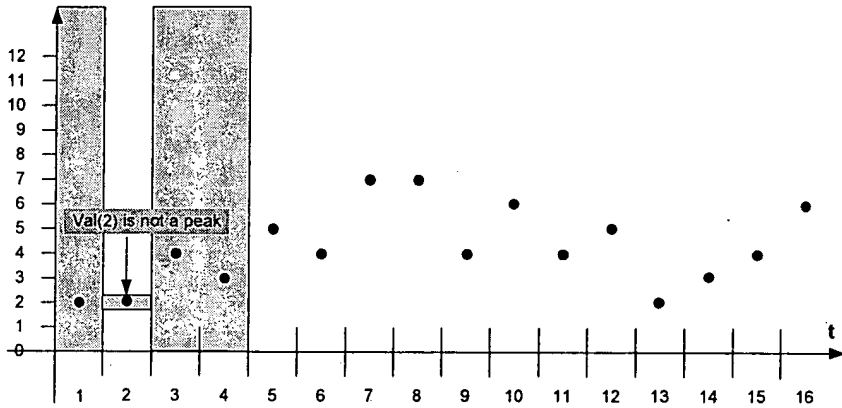


Figure 22: 2<sup>nd</sup> digital sample is compared to its 2 closest neighbors to the right and unique neighbor to the left

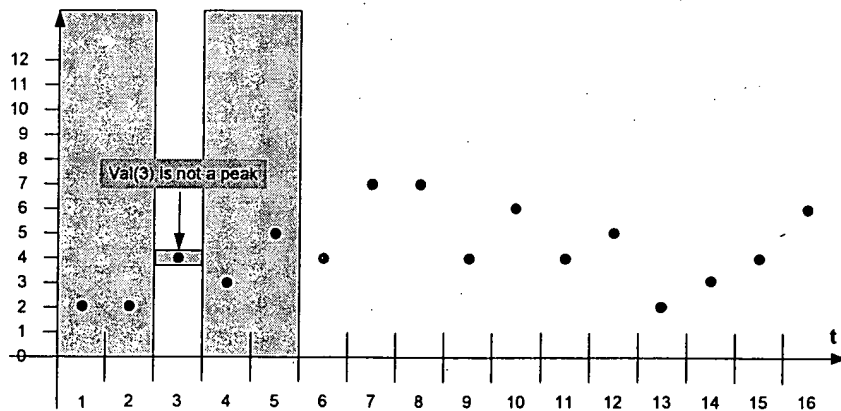


Figure 23: 3<sup>rd</sup> digital sample is compared to its 2 closest neighbors to the right and left (general situation)

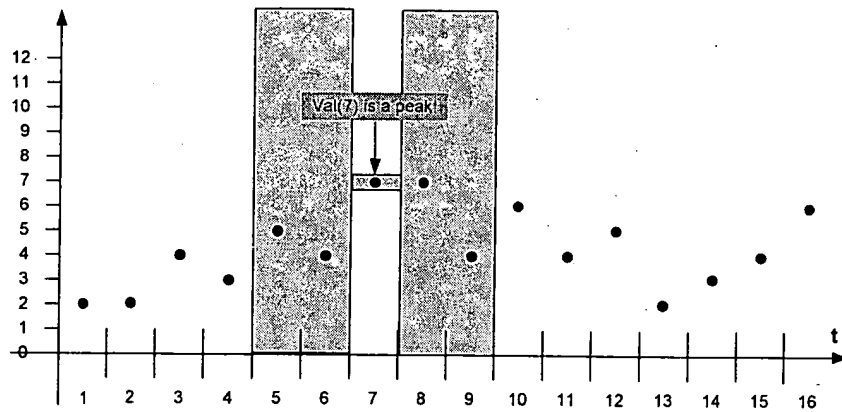


Figure 24: 7<sup>th</sup> digital sample is a peak

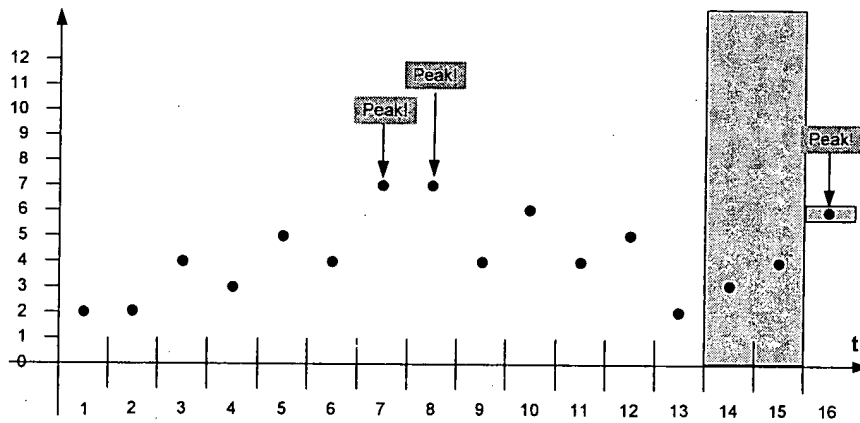


Figure 25: Last sample is compared to its 2 closest neighbors to the left.  
 A total of three peaks were detected by the system

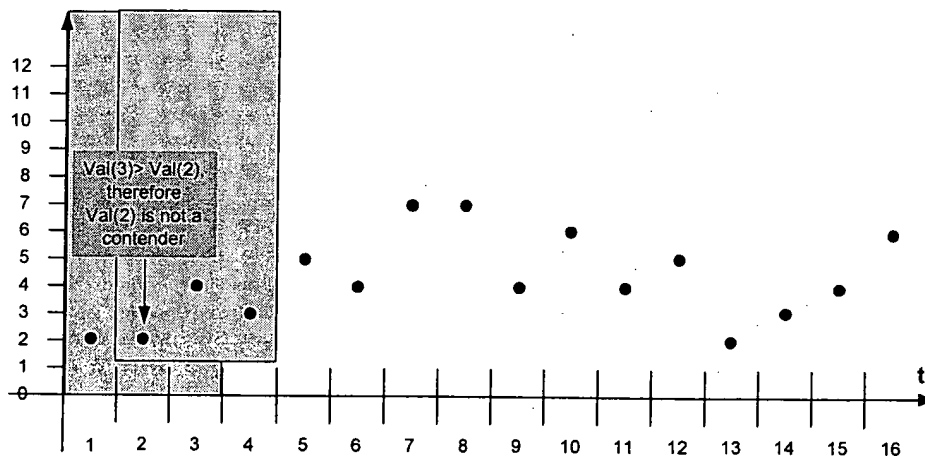


Figure 26: Digital sample 2 is compared to its immediate neighbors to the right and to the left.

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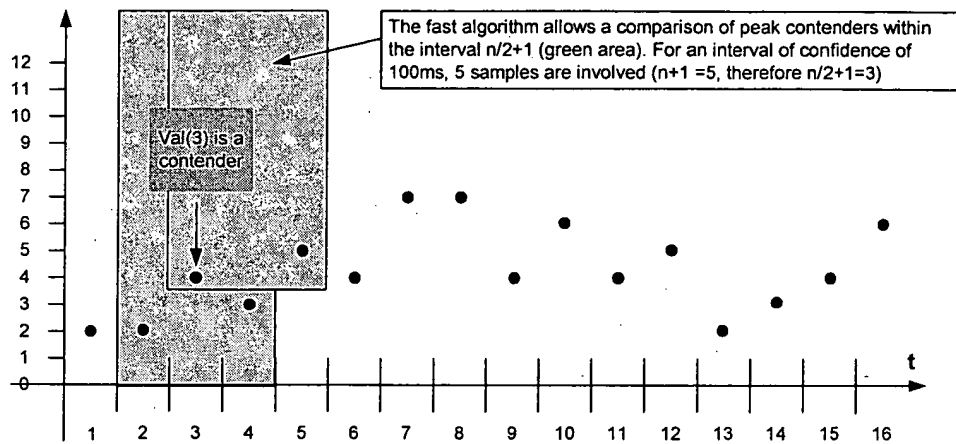


Figure 27

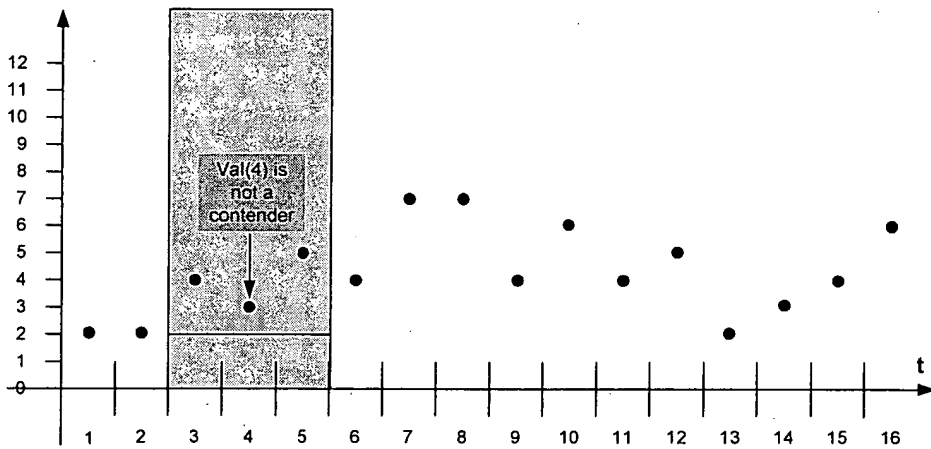


Figure 28

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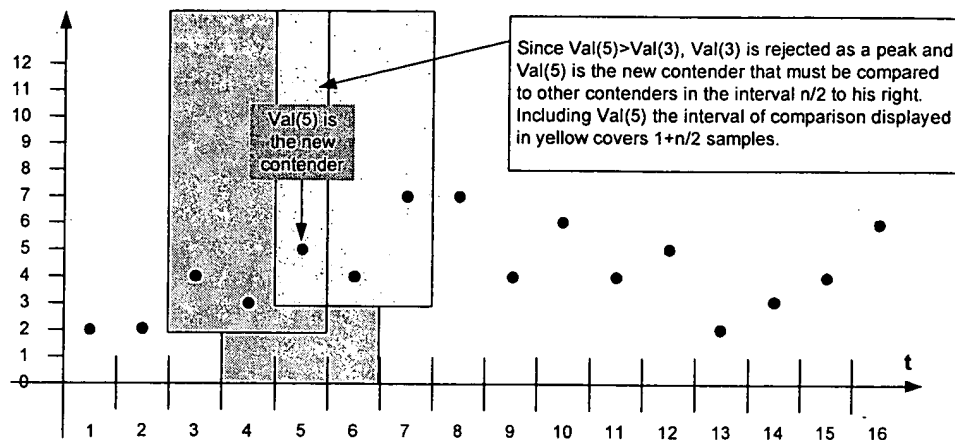


Figure 29

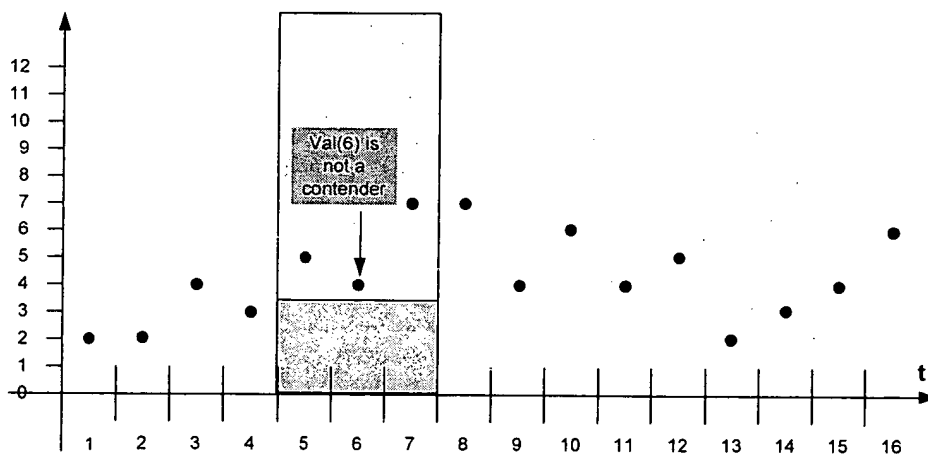


Figure 30

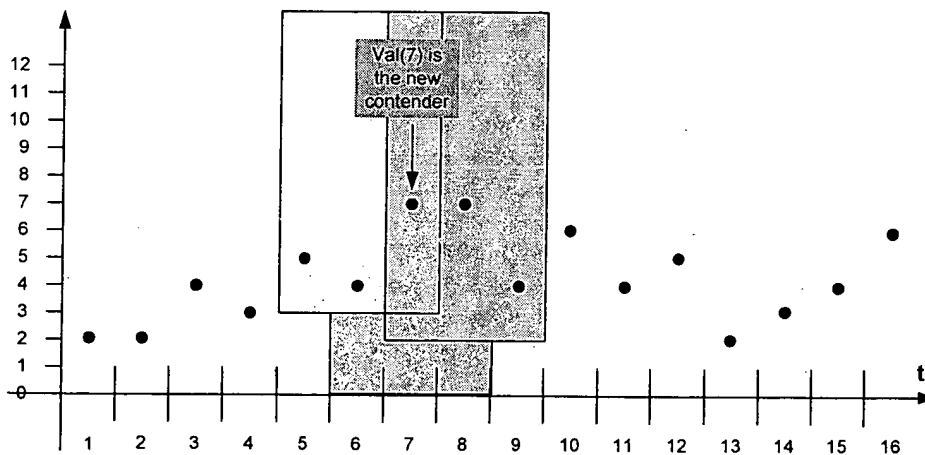


Figure 31

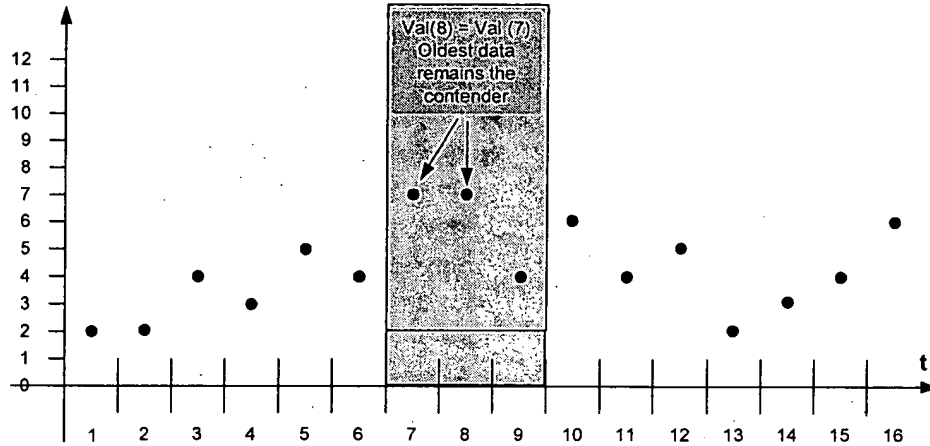


Figure 32

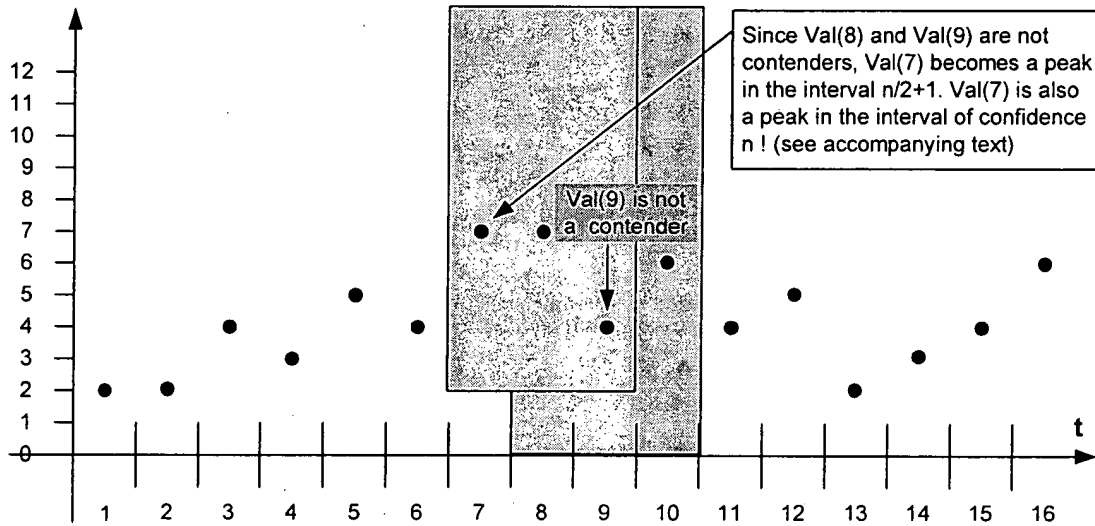


Figure 33

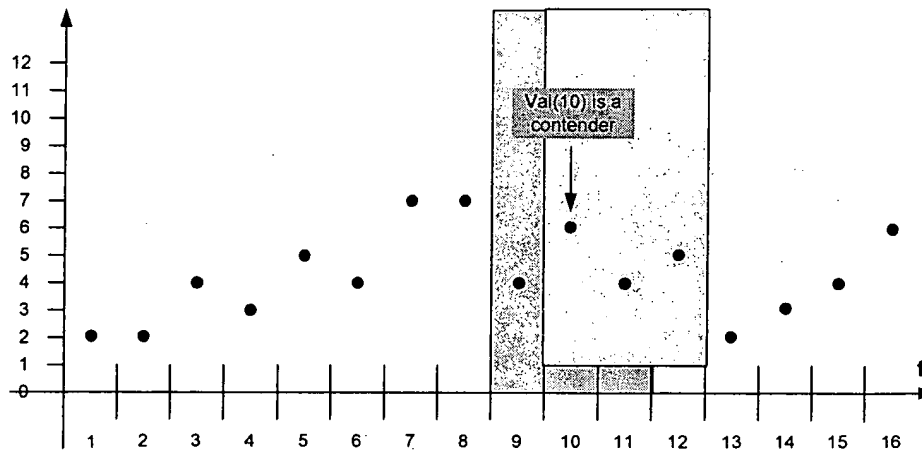


Figure 34

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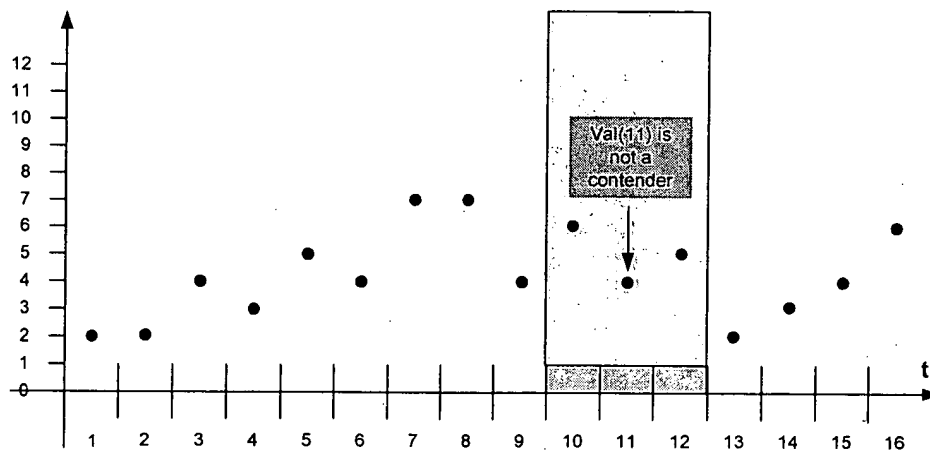


Figure 35

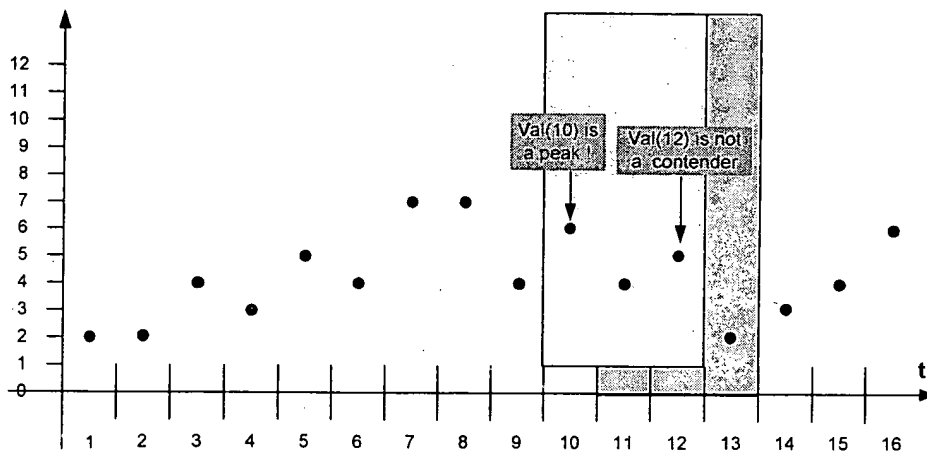


Figure 36

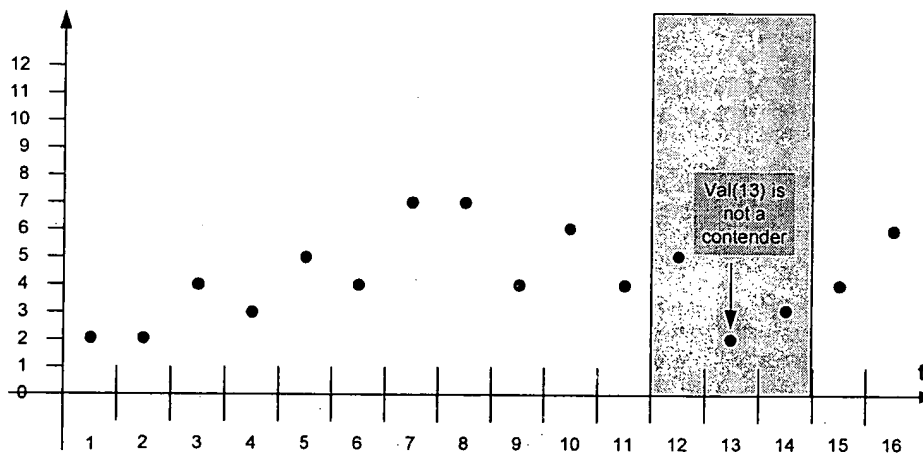


Figure 37

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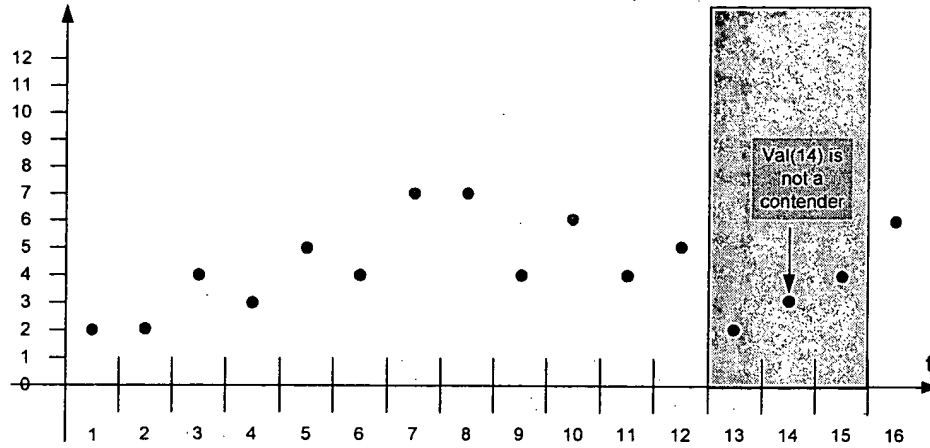


Figure 38

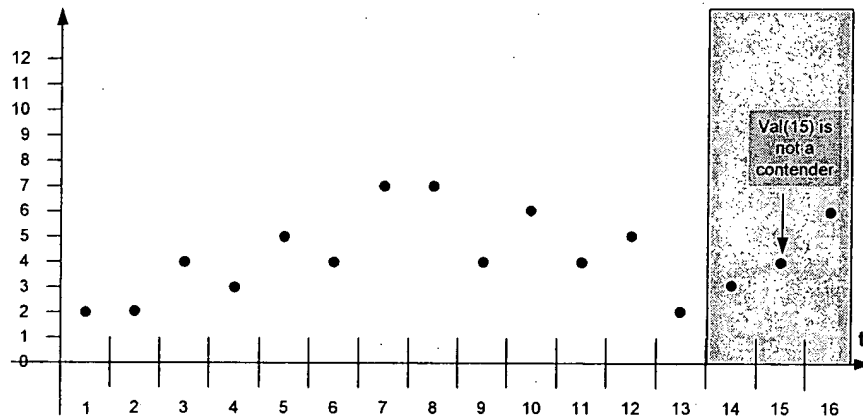


Figure 39

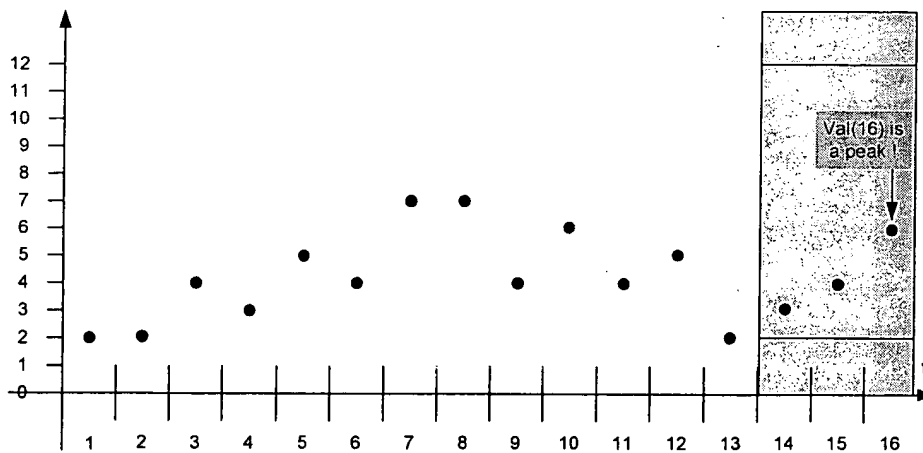


Figure 40

10056304-012402

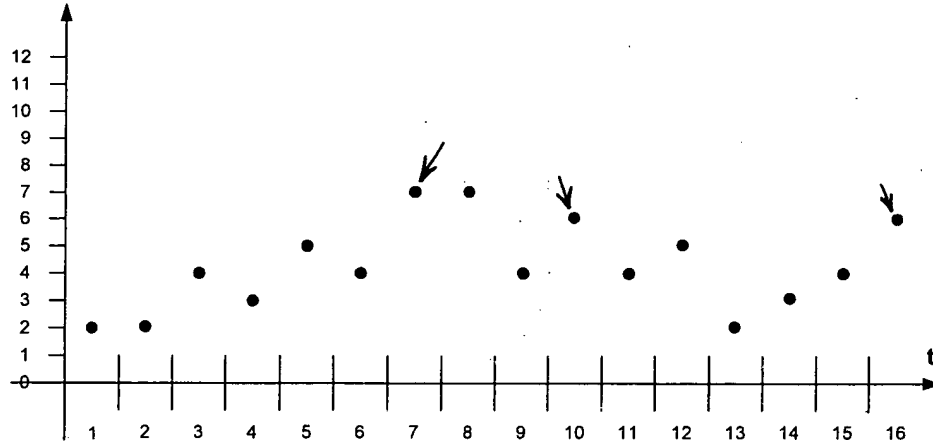


Figure 41: Three peaks

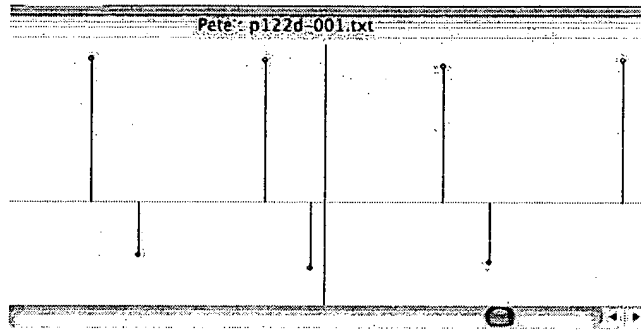


Figure 42: Butterfly (stroke frequency 0.7 Hz). Maxima and minima are displayed

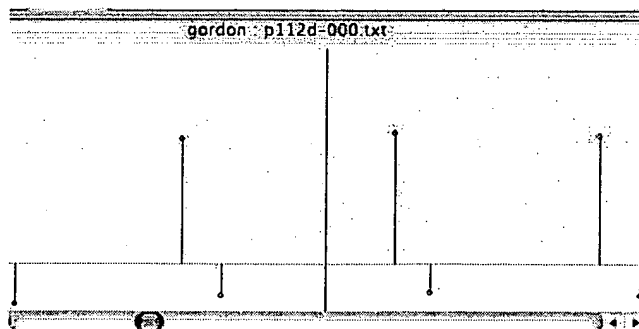


Figure 43: Butterfly. Maxima and minima are displayed

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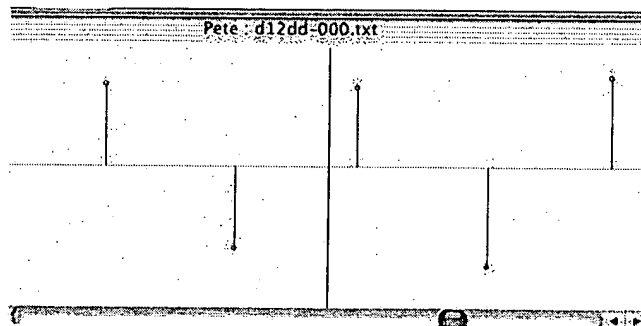


Figure 44: Backstroke. Maxima and minima are displayed

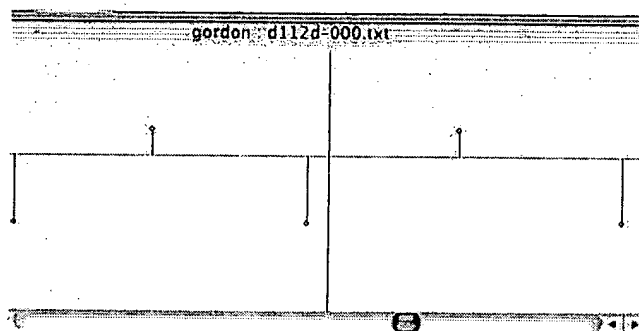


Figure 45: Backstroke (stroke frequency 0.4 Hz). Maxima and minima are displayed

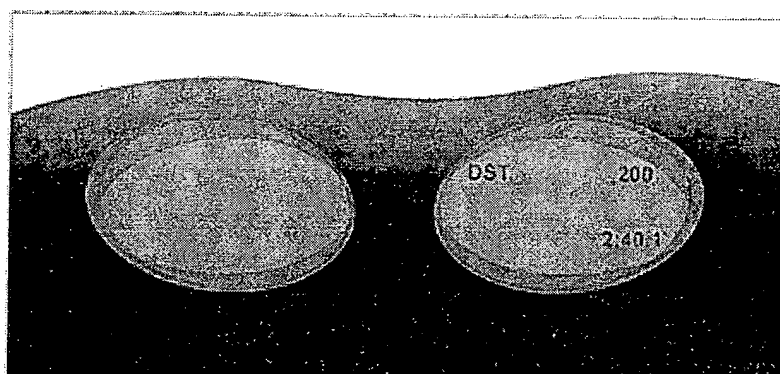


Figure 46

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